

Publications of the Washington Division of Geology and Earth Resources

July 2003



WASHINGTON STATE DEPARTMENT OF
Natural Resources

Doug Sutherland - Commissioner of Public Lands

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HOW TO OBTAIN PUBLICATIONS OF THE WASHINGTON DIVISION OF GEOLOGY AND EARTH RESOURCES

In-Print Publications

This publication lists Washington Division of Geology and Earth Resources publications that are in print. Most can be purchased from our Olympia office (map and address below) using the order form at the back of this publication or are available on our website (http://www.dnr.wa.gov/geology/pubs/pubs_ol.htm). Please note that over-the-counter sales are no longer available; see the order form for details. We cannot provide open-file reports in classroom quantities. Schools may want to order reports and copy them for classroom use.

Out-of-Print Publications

Many of our publications are out of print and no longer available from us, but these, as well as publications still in print, are listed in our online bibliography at <http://www.dnr.wa.gov/geology/washbib.htm> and can be consulted at many public, university, and technical libraries. These publications can also be used in our Olympia reference library. If a publication is not on file at your local library, ask your librarian to arrange an interlibrary loan.

Out-of-print items are often returned to the Division and will be made available 'first-come, first-served'. Availability changes often; call or e-mail our main office for current availability.

Ordering by Mail

An order form is included at the end of this publication. All orders must be prepaid. Make check or money order payable to the Department of Natural Resources. *Add postage and handling to each mail order; see order form on p. 17.*

Washington Geology

Washington Geology is published about four times a year. (See p. 15.) Budget constraints require the Division of Geology and Earth Resources to discontinue the printing of *Washington Geology*. An electronic version, in PDF format, will be available approximately quarterly on the Division's website (see address below).

All new division reports or maps are announced on our website and in *Washington Geology*.

E-mail Addresses

For library services:
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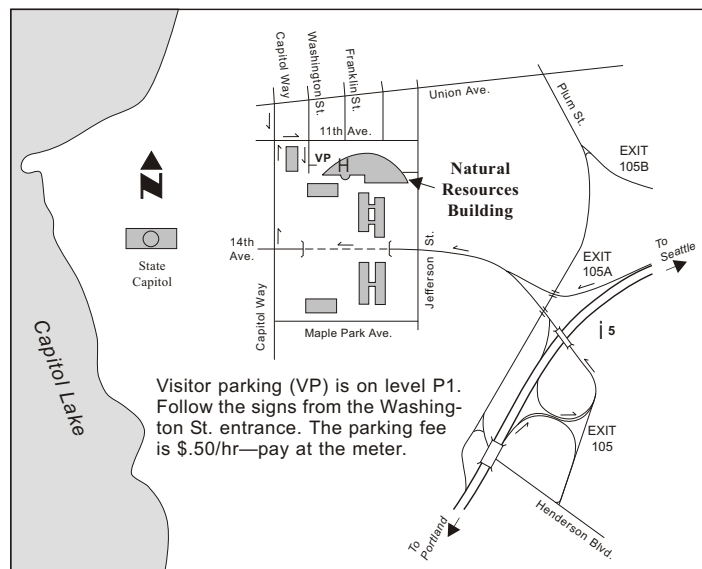
Street Address

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The Division of Geology is across the rotunda, past the four elevators, on the north side of first floor. See the building directory in the lobby.

Published in the U.S.A.



■ BULLETINS ■

Division of Mines and Geology

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| <p>37. Inventory of Washington minerals; Part I. (2nd ed.) Nonmetallic minerals, by G. M. Valentine, revised by M. T. Huntting. 1960. 2 v. (v. 1, 175 p. text; v. 2, maps, 39 pl.). \$3.00</p> <p>43. Eocene stratigraphy of the lower Cowlitz River–eastern Willapa Hills area, southwestern Washington, by D. A. Henriksen. 1956. 122 p. \$1.50</p> <p>47. Coal reserves of Washington, by H. M. Beikman, H. D. Gower, and T. A. M. Dana. 1961. 115 p. [Reprinted with 15-p. addendum by H. W. Schasse, T. J. Walsh, and W. M. Phillips. 1984.] \$3.50</p> <p>49. Saline lake deposits in Washington, by W. A. G. Bennett. 1962. 129 p. \$1.50</p> <p>51. Barite in Washington, by W. S. Moen. 1964. 112 p., 2 pl. \$1.00</p> <p>52. Limestone resources of western Washington, by W. R. Danner. 1966. 474 p. \$4.50</p> <p>53. Stratigraphy and foraminifera of the Satsop River area, southern Olympic Peninsula, Washington, by W. W. Rau. 1966. 66 p. \$1.50</p> <p>55. Building stone of Washington, by W. S. Moen. 1967. 85 p. \$.75</p> <p>56. Geology of the Wynoochee Valley quadrangle, Grays Harbor County, Washington, by W. W. Rau. 1967. 51 p. \$1.50</p> <p>61. Lead-zinc deposits in the Kootenay arc, northeastern Washington and adjacent British Columbia, edited by A. E. Weissenborn, F. C. Armstrong, and J. T. Fyles. 1970. 123 p. \$2.00</p> | <p>62. Foraminifera, stratigraphy, and paleoecology of the Quinault Formation, Point Grenville–Raft River coastal area, Washington, by W. W. Rau. 1970. 41 p. \$3.00</p> <p>65. Distribution of copper and other metals in gully sediments of part of Okanogan County, Washington, by K. F. Fox, Jr., and C. D. Rinehart. 1972. 38 p., 4 pl. \$2.00</p> |
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Division of Geology and Earth Resources

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| <p>66. Geology of the Washington coast between Point Grenville and the Hoh River, by W. W. Rau. 1973. 58 p. \$3.00</p> <p>69. Silver occurrences of Washington, by W. S. Moen. 1976. 188 p. [Reprinted 1982.] \$4.00</p> <p>70. Zinc and lead ore deposits in carbonate rocks, Stevens County, Washington, by J. W. Mills. 1977. 171 p. \$3.00</p> <p>72. Washington coastal geology between the Hoh and Quillayute Rivers, by W. W. Rau. 1980. 57 p. \$5.00</p> <p>74. Reconnaissance geochemical survey of gully and stream sediments, and geologic summary, in part of the Okanogan Range, Okanogan County, Washington, by C. D. Rinehart. 1981. 24 p., 3 pl. \$2.00</p> <p>75. Geology of the Wenatchee and Monitor quadrangles, Chelan and Douglas Counties, Washington, by R. L. Gresens. 1983. 75 p., 3 pl., scale 1:24,000. \$5.00</p> <p>77. Selected papers on the geology of Washington, edited by J. E. Schuster. 1987. 406 p. \$16.00</p> <p>78. Engineering geology in Washington, edited by R. W. Galster, chairman. 1989. [2 v.], 1234 p. \$30.00</p> |
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■ GEOLOGIC MAPS ■

Division of Mines and Geology

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| <p>GM-1. Preliminary geologic map of the Hobart and Maple Valley quadrangles, King County, Washington, by J. D. Vine. 1962. 1 sheet, scale 1:24,000. \$1.50</p> <p>GM-2. Preliminary geologic map of the Cumberland quadrangle, King County, Washington, by H. D. Gower and A. A. Wanek. 1963. 1 sheet, scale 1:24,000. \$1.00</p> <p>GM-3. Geology of the Simcoe Mountains volcanic area, Washington, by R. A. Sheppard. 1967. 1 sheet, scale 1:125,000. \$1.00</p> <p>GM-4. Geology of the Grays River quadrangle, Wahkiakum and Pacific Counties, Washington, by E. W. Wolfe and E. H. McKee. 1968. 6 p., 1 pl., scale 1:62,500. \$1.00</p> <p>GM-5. Preliminary geologic map of the Chewelah Mountain quadrangle, Stevens County, Washington, by L. D. Clark and F. K. Miller. 1968. 6 p., 2 pl., scale 1:62,500. \$1.00</p> <p>GM-6. Preliminary geologic map of the Loon Lake quadrangle, Stevens and Spokane Counties, Washington, by F. K. Miller. 1969. 7 p., 1 pl., scale 1:62,500. \$1.00</p> | <p>GM-11. Complete Bouguer gravity anomaly map of Washington, by W. E. Bonini, D. W. Hughes, and Z. F. Daneš. 1974. 1 sheet, scale 1:500,000. \$2.50</p> <p>GM-15. Slope stability map of Thurston County, Washington, by E. R. Artim. 1976. 1 sheet, scale 1:125,000. \$1.00</p> <p>GM-16. Relative ground settlement hazards of Thurston County, Washington, by E. R. Artim. 1976. 1 sheet, scale 1:125,000. \$1.00</p> <p>GM-17. Relative potential for differential settlement, Gig Harbor Peninsula, Pierce County, Washington, by Mackey Smith. 1976. 1 sheet, scale 1:31,250. \$1.00</p> <p>GM-18. Relative slope stability of the Gig Harbor Peninsula, Pierce County, Washington, by Mackey Smith. 1976. 1 sheet, scale 1:31,250. \$1.00</p> <p>GM-19. Geologic factors affecting waste disposal practices, Gig Harbor Peninsula, Pierce County, Washington, by Mackey Smith. 1976. 1 sheet, scale 1:31,250. \$1.00</p> |
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■ GEOLOGIC MAPS ■

GM-20. Preliminary surficial geologic map of the Mukilteo and Everett quadrangles, Snohomish County, Washington, by Mackey Smith. 1976. 1 sheet, scale 1:31,250.	\$1.00	GM-40. Geologic map of southeast Asotin County, Washington, by S. P. Reidel, P. R. Hooper, G. D. Webster, and V. E. Camp. 1992. 22 p., 1 pl., scale 1:48,000.	\$1.00
GM-21. Mineral resources of the southern Hood Canal area, Washington, by Mackey Smith and R. J. Carson. 1976. 1 sheet, scale 1:62,500.	\$1.00	GM-41. Liquefaction susceptibility for the Des Moines and Renton 7.5-minute quadrangles, Washington, by S. P. Palmer, H. W. Schasse, and D. K. Norman. 1994. 2 pl., scale 1:24,000.	\$4.00
GM-22. Mineral resource maps of Washington, by W. S. Moen. 1978. 4 p., 4 sheets, scale 1:1,000,000 [Reprinted 1986.]	\$2.00	GM-42. Relative earthquake hazard map for the Vancouver, Washington, urban region, by M. A. Mabey, I. P. Madin, and S. P. Palmer. 1994. 2 pl., scale 1:24,000.	Free
GM-23. Geologic map of the Marblemount quadrangle, Washington, by Peter Misch. 1979. 1 sheet, scale 1:48,000.	\$4.00	GM-43. Liquefaction susceptibility for the Auburn and Poverty Bay 7.5-minute quadrangles, Washington, by S. P. Palmer, T. J. Walsh, R. L. Logan, and W. G. Gerstel. 1995. 15 p., 2 pl., scale 1:24,000.	\$5.00
GM-24. Geologic map in the vicinity of the lower Bogachiel and Hoh River valleys and the Washington coast, by W. W. Rau. 1979. 1 sheet, scale 1:62,500.	\$4.50	GM-44. Liquefaction susceptibility for the Sumner 7.5-minute quadrangle, Washington, by J. D. Dragovich and P. T. Pringle, with a section on liquefaction by S. P. Palmer. 1995. 26 p., 1 pl., scale 1:24,000.	\$2.50
GM-25. Geothermal resources of Washington, compiled by M. A. Korosec, K. L. Kaler, J. E. Schuster, R. G. Bloomquist, S. J. Simpson, and D. D. Blackwell. 1981. 1 sheet, scale 1:500,000.	Free	GM-45. Geologic map of Washington—Southeast quadrant, by J. E. Schuster, C. W. Gulick, S. P. Reidel, K. R. Fecht, and Stephanie Zurenko. 1997. 20 p., 1 pl., scale 1:250,000, and accompanying explanatory sheet with bedrock geology and tectonic map at 1:625,000.	Rolled \$10.00 Folded \$8.00
GM-27. Complete Bouguer gravity anomaly map, Cascade Mountains, Washington, by Z. F. Daneš and W. M. Phillips. 1983. 2 sheets, scale 1:250,000.	\$3.25	GM-46. Geologic map and bedrock history of the Gilbert 7.5-minute quadrangle, Chelan and Okanogan Counties, Washington, by J. D. Dragovich, D. K. Norman, R. A. Haugerud, and R. B. Miller. 1997. 67 p., 1 pl., scale 1:24,000.	\$4.00
GM-32. Geologic maps of the Marcus and Kettle Falls quadrangles, Stevens and Ferry Counties, Washington, by J. W. Mills. 1985. 18 p., 2 pl., scale 1:24,000.	\$6.00	GM-47. Geologic folio of the Olympia–Lacey–Tumwater urban area, Washington—Liquefaction susceptibility map, by S. P. Palmer, T. J. Walsh, and W. G. Gerstel. 1999. 16 p., 1 pl., scale 1:48,000.	\$2.50
GM-33. Geologic map of the Humptulips quadrangle and adjacent areas, Grays Harbor County, Washington, by W. W. Rau. 1986. 1 sheet, scale 1:62,500.	\$3.00	GM-48. Liquefaction susceptibility of the greater Eastside area, King County, Washington, by S. P. Palmer, B. D. Evans, and H. W. Schasse. 2002. 14 p., 1 pl., scale 1:36,000.	\$3.00
GM-34. Geologic map of Washington—Southwest quadrant, by T. J. Walsh, M. A. Korosec, W. M. Phillips, R. L. Logan, and H. W. Schasse. 1987. 28 p., 1 pl., scale 1:250,000, and accompanying explanatory sheet.	Rolled \$8.00 Folded \$6.00	GM-49. Tsunami hazard map of the southern Washington coast—Modeled tsunami inundation from a Cascadia subduction zone earthquake, by T. J. Walsh, C. G. Caruthers, A. C. Heinitz, E. P. Myers III, A. M. Baptista, G. B. Erdakos, and R. A. Kamphaus. 2000. 12 p., 1 pl., scale 1:100,000.	\$4.00
GM-35. Geologic map of the Bluelight 15-minute quadrangle, Washington, by R. D. Bentley, N. P. Campbell, and J. E. Powell. 1988. 1 sheet, scale 1:48,000.	\$2.00	GM-50. Geologic map of Washington—Northwest quadrant, by J. D. Dragovich, R. L. Logan, H. W. Schasse, T. J. Walsh, W. S. Lingley, Jr., D. K. Norman, W. J. Gerstel, T. J. Lapen, J. E. Schuster, and K. D. Meyers. 2002. 72 p., 1 pl., scale 1:250,000, and two accompanying explanatory sheets.	Rolled \$12.00 Folded \$10.00
GM-36. Geologic map of the Poisel Butte 15-minute quadrangle, Washington, by R. D. Bentley, N. P. Campbell, and J. E. Powell. 1988. 1 sheet, scale 1:48,000.	\$2.00		
GM-37. Geologic map of the Logy Creek 15-minute quadrangle, Washington, by R. D. Bentley, N. P. Campbell, and J. E. Powell. 1988. 1 sheet, scale 1:48,000.	\$2.00		
GM-38. Geologic map of the Saddle Mountains, Washington, by S. P. Reidel. 1988. 28 p., 5 pl., scale 1:48,000.	\$6.50		
GM-39. Geologic map of Washington—Northeast quadrant, by K. L. Stoffel, N. L. Joseph, S. Z. Waggoner, C. W. Gulick, M. A. Korosec, and B. B. Bunning. 1991. 36 p., 1 pl., scale 1:250,000, and two accompanying explanatory sheets, including a bedrock geologic and tectonic map at 1:625,000 scale.	Rolled \$10.00 Folded \$8.00		

■ TOPOGRAPHIC MAPS ■

TM-1.	Topographic map, State of Washington—Southwest quadrant. 1987, prepared by Division of Geology and Earth Resources. 1 sheet, scale 1:250,000.	Rolled \$3.50 Folded \$2.00	TM-3.	Topographic map, State of Washington—Southeast quadrant. 1997, prepared by Division of Geology and Earth Resources. 1 sheet, scale 1:250,000.	Rolled \$3.50 Folded \$2.00
TM-2.	Topographic map, State of Washington—Northeast quadrant. 1991, prepared by Division of Geology and Earth Resources. 1 sheet, scale 1:250,000.	Rolled \$3.50 Folded \$2.00			

■ INFORMATION CIRCULARS ■

Division of Mines and Geology

33.	Fossils in Washington, by V. E. Livingston, Jr. 1959. 35 p. [Reprinted 1983.]	\$.50
39.	Marketing of metallic and nonmetallic minerals, by D. L. Anderson. 1963. 39 p.	Free
41.	Origin of Cascade landscapes, by J. H. Mackin and A. S. Cary. 1965. 35 p.	\$.50

Division of Geology and Earth Resources

51.	Piercement structure outcrops along the Washington coast, by W. W. Rau and G. R. Grocock. 1974. 7 p.	\$.25
53.	Compilation of earthquake hypocenters in western Washington [July 1970–Dec. 1972], by R. S. Crosson. 1974. 26 p.	\$.75
54.	A geologic road log over Chinook, White Pass, and Ellensburg to Yakima highways, by N. P. Campbell. 1975. 82 p.	\$2.00
55.	Compilation of earthquake hypocenters in western Washington—1973, by R. S. Crosson. 1975. 14 p.	\$.50
59.	Washington gravity base station network, by T. H. Nilsen. 1976. 83 p.	\$2.00
61.	Annotated guide to sources of information on the geology, minerals, and ground-water resources of the Puget Sound region, Washington, King County section, by W. H. Reichert, with supplemental references by D. D. Dethier. 1978. 63 p.	\$1.50
64.	Compilation of earthquake hypocenters in western Washington—1975, by R. S. Crosson and L. L. Nosen. 1978. 12 p.	\$.50
65.	Compilation of earthquake hypocenters in western Washington—1976, by R. S. Crosson and L. L. Nosen. 1978. 13 p.	\$.50
66.	Compilation of earthquake hypocenters in western Washington—1977, by R. S. Crosson and L. L. Nosen. 1978. 12 p.	\$.50
72.	Compilation of earthquake hypocenters in western Washington—1978, by L. L. Nosen and R. S. Crosson. 1980. 18 p.	\$.50
74.	The mineral industry of Washington—Highlights of its development, 1853–1980, by W. S. Moen. 1982. 26 p. [Reprinted 1983.]	\$1.00
75.	Oil and gas exploration in Washington, 1900–1982, by C. R. McFarland. 1983. 119 p.	\$2.50
76.	Mount St. Helens—Annotated index to video archives, by R. L. Logan and C. J. Manson. 1983. 51 p.	\$1.50
78.	A guide for the preliminary evaluation of rock for road surfacing, by V. E. Livingston, Jr. 1984. 8 p.	Free

79.	Compilation of earthquake hypocenters in western Washington—1979, by L. L. Nosen, R. S. Ludwin, and R. S. Crosson. 1985. 19 p.	\$.50
80.	Theses on Washington geology, 1901–1985, compiled by C. J. Manson. 1986. 400 p., 5 pl.	\$8.00
81.	The Puget Lowland earthquakes of 1949 and 1965—Reproductions of selected articles describing damage, compiled by G. W. Thorsen. 1986. 113 p.	\$2.50
82.	Earthquake hypocenters in Washington and northern Oregon—1980, compiled by Anthony Qamar, Anne Rathbun, R. S. Ludwin, R. S. Crosson, and S. D. Malone. 1986. 64 p.	\$2.00
83.	Earthquake hypocenters in Washington and northern Oregon—1981, compiled by Anthony Qamar, Anne Rathbun, R. S. Ludwin, L. L. Nosen, R. S. Crosson, and S. D. Malone. 1987. 50 p.	\$1.50
85.	Washington State earthquake hazards, by L. L. Nosen, Anthony Qamar, and G. W. Thorsen. 1988. 77 p.	Free
87.	Directory of Washington mining operations, 1992, by W. S. Lingley, Jr., and C. J. Manson. 1992. 76 p.	\$2.50
88.	Roadside geology of Mount St. Helens National Volcanic Monument and vicinity, by P. T. Pringle. 1993. Revised 2002. 132 p.	\$3.50
89.	Earthquake hypocenters in Washington and northern Oregon, 1987–1989, and Operation of the Washington Regional Seismograph Network, by R. S. Ludwin, A. I. Qamar, S. D. Malone, C. Jonientz-Trisler, R. S. Crosson, Richard Benson, and S. C. Moran. 1994. 40 p.	\$2.00
90.	Flood basalts and glacier floods—Roadside geology of parts of Walla Walla, Franklin, and Columbia Counties, Washington, by R. J. Carson and K. R. Pogue. 1996. 47 p.	\$3.50
91.	Reconnaissance investigation of sand, gravel, and quarried bedrock resources in the Bellingham 1:100,000 quadrangle, Washington, by J. S. Loen, W. S. Lingley, Jr., Garth Anderson, and T. J. Lapen. 2001. 45 p., 1 pl., scale 1:100,000.	\$9.50
92.	Reconnaissance investigation of sand, gravel, and quarried bedrock resources in the Yakima 1:100,000 quadrangle, Washington, by K. D. Weberling, A. B. Dunn, and J. E. Powell. 2001. 34 p., 1 pl., scale 1:100,000.	\$9.50
93.	Reconnaissance investigation of sand, gravel, and quarried bedrock resources in the Toppenish 1:100,000 quadrangle, Washington, by A. B. Dunn. 2001. 23 p., 1 pl., scale 1:100,000.	\$9.00

■ INFORMATION CIRCULARS ■

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| <p>94. Directory of Washington mines, 2001, compiled by D. T. McKay, Jr., D. K. Norman, M. A. Shawver, and R. F. Teissere. 2001. 104 p. [http://www.dnr.wa.gov/geology/pubs/pubs_ol.htm]</p> <p>95. Reconnaissance investigation of sand, gravel, and quarried bedrock resources in the Mount St. Helens 1:100,000 quadrangle, Washington, by D. K. Norman, A. B. Dunn, and C. M. Kenner. 2001. 52 p., 1 pl., scale 1:100,000.</p> | <p>96. Reconnaissance investigation of sand, gravel, and quarried bedrock resources in the Snoqualmie Pass 1:100,000 quadrangle, Washington, by W. S. Lingley, Jr., D. A. Knoblach, and C. K. B. Nightingale. 2002. 63 p., 1 pl., scale 1:100,000.</p> <p>97. Reconnaissance investigation of sand, gravel, and quarried bedrock resources in the Shelton 1:100,000 quadrangle, Washington, by A. B. Dunn, Gordon Adams, W. S. Lingley, Jr., J. S. Loen, and A. L. Pittelkau. 2002. 54 p., 1 pl., scale 1:100,000.</p> |
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■ REPORTS OF INVESTIGATIONS ■

Division of Geology

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| <p>7. Character and tonnage of the Turk magnesite deposit, by W. A. G. Bennett. 1943. 22 p., 1 pl.</p> | <p>\$0.25</p> |
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Division of Geology and Earth Resources

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| <p>24. Mount St. Helens ash—Properties and possible uses, by W. S. Moen and G. B. McLucas. 1981. 60 p.</p> <p>26. Coastal wells of Washington, by W. W. Rau and C. R. McFarland. 1982. 4 sheets.</p> <p>27. Geology of the Grande Ronde lignite field, Asotin County, Washington, by K. L. Stoffel. 1984. 79 p., 1 pl., scale 1:48,000.</p> <p>28. Tin, tungsten, and molybdenum geochemistry of parts of Stevens and Spokane Counties, Washington, by B. B. Bunning. 1985. 57 p.</p> <p>29. Mima Mounds—An evaluation of proposed origins with special reference to the Puget Lowland, by A. L. Washburn. 1988. 53 p.</p> | <p>\$5.00</p> <p>Free</p> <p>\$4.00</p> <p>\$1.50</p> <p>\$2.00</p> |
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| <p>30. Geology of the Upper Proterozoic to Lower Cambrian Three Sisters Formation, Gypsy Quartzite, and Addy Quartzite, Stevens and Pend Oreille Counties, northeastern Washington, by K. A. Lindsey, D. R. Gaylord, and L. H. Groffman. 1990. 37 p.</p> <p>31. Paleontology and stratigraphy of Eocene rocks at Pulali Point, Jefferson County, eastern Olympic Peninsula, Washington, by R. L. Squires, J. L. Goedert, and K. L. Kaler. 1992. 27 p.</p> <p>32. Liquefaction features from a subduction zone earthquake—Preserved examples from the 1964 Alaska earthquake, by T. J. Walsh, R. A. Combellick, and G. L. Black. 1995. 80 p.</p> <p>33. Late Pleistocene stratigraphy in the south-central Puget Lowland, Pierce County, Washington, by R. K. Borden and K. G. Troost. 2001. 33 p. [http://www.dnr.wa.gov/geology/pubs/pubs_ol.htm]</p> | <p>\$1.50</p> <p>\$2.00</p> <p>\$4.00</p> <p>\$3.00</p> |
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■ OPEN FILE REPORTS ■

Some open-file reports are preliminary and have not been edited or reviewed for conformity with our standards and geologic nomenclature. The year of publication is indicated by the digits to the left of the hyphen in the OFR number. Items marked “nonreproducible” can be inspected in the Division library in Olympia. Those marked “web only” are available only on the Division website (see p. 2).

Division of Geology

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| <p>21-0. Geological investigation of the proposed Grand Coulee Reservoir, by O. P. Jenkins and H. H. Cooper. 21 p., 1 pl., scale 1:63,360 [plate nonreproducible].</p> | <p>\$1.50</p> |
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Division of Mines and Geology

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| <p>69-1. Geology and mineral deposits in Stevens County, Washington, by N. P. Campbell and R. K. Sorem. 5 p., 7 pl.</p> <p>69-2. Analyses of stream sediment samples in Washington for copper, molybdenum, lead, and zinc, by W. S. Moen. 91 p., 39 pl., scale 1:125,000.</p> | <p>\$28.50</p> <p>\$40.00</p> |
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| <p>72-1. Report on geothermal ground noise measurements in Washington State, by R. S. Crosson and I. R. Mayers. 50 p. (including addendum).</p> | <p>\$2.00</p> |
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Division of Geology and Earth Resources

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| <p>73-2. Slope stability of the Longview–Kelso urban area, Cowlitz County, by A. J. Fiksdal. 4 p., 2 pl., scale 1:24,000.</p> <p>73-3. Preliminary geologic map of the southern Cascade Range, by P. E. Hammond. 5 pl., scales 1:24,000, 1:125,000, 1:500,000.</p> <p>73-4. A learning guide on the geology of the Cispus Environmental Center area, Lewis County, Washington, by J. E. Schuster. 53 p.</p> <p>74-1. Tephra of Salmon Springs age from the southeastern Olympic Peninsula, Washington, by R. U. Birdseye and R. J. Carson. 35 p.</p> <p>75-3. Geology of the Sherman Peak and west half of the Kettle Falls quadrangles, Ferry County, Washington, by C. D. Campbell and G. W. Thorsen. 1 map, scale 1:62,500. [Revised 1980.]</p> | <p>\$7.50</p> <p>\$19.00</p> <p>\$2.00</p> <p>\$1.00</p> <p>\$3.75</p> |
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■ OPEN FILE REPORTS ■

75-4.	Slope stability map of north-central Mason County, Washington, by R. J. Carson. 1 sheet, scale 1:62,500.	\$3.75	76-12.	Monitoring of an active fault near Lilliwaup, Mason County, Washington, by K. L. Othberg and J. B. Hall. 7 p.	\$1.00
75-6.	Geologic mapping of the Wenatchee area, by R. L. Gresens. 2 sheets, scale 1:12,000.	\$7.50	76-13.	The Ledbetter Slate–Metaline Limestone contact—1976 field study report, by B. W. Hurley. 23 p.	\$1.00
75-8.	Geomorphology of the Colockum Pass area, Kittitas County, Washington, by K. L. Othberg. 3 p.	\$1.00	76-14.	Field report—Summer 1976 [outcrops of Metaline limestone in Stevens and Pend Oreille Counties, Washington], by H. J. Fischer. 11 p., 1 pl.	\$4.00
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■ OPEN FILE REPORTS ■

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91-2.	Coal maturation and the natural gas potential of western and central Washington, by T. J. Walsh and W. S. Lingley, Jr. 26 p., 1 pl.	\$5.00	94-8.	Geologic map of the Richland 1:100,000 quadrangle, Washington, compiled by S. P. Reidel and K. R. Fecht. 21 p., 1 pl., scale 1:100,000.	\$4.50
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98-7.	Geologic map of the 7.5-minute Sequim quadrangle, Clallam County, Washington, by H. W. Schasse and R. L. Logan. 16 p., 2 pl.	\$8.00	2002-1.	Tsunami inundation map of the Port Angeles, Washington, area, by T. J. Walsh, E. P. Myers III, and A. M. Baptista. 48 x 36 in. color pl., scale 1:24,000. [http://www.dnr.wa.gov/geology/pubs/pubs_ol.htm]	\$7.50 CD \$1.00
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2002-5.	Geologic map of the Utsalady and Conway 7.5-minute quadrangles, Skagit, Snohomish, and Island Counties, Washington, by J. D. Dragovich, L. A. Gilbertson, D. K. Norman, Garth Anderson, and G. T. Petro. 34 p., 2 color pl., 28 x 48 in. and 36 x 40 in., scale 1:24,000. [http://www.dnr.wa.gov/geology/pubs/pubs_ol.htm]	\$17.50 CD \$1.00	2003-5	Geologic map of the Washington portion of the Cape Flattery 1:100,000 quadrangle, by H. W. Schasse. 45 x 36 in. color pl., scale 1:100,000. [http://www.dnr.wa.gov/geology/pubs/pubs_ol.htm]	\$7.50 CD \$1.00
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2002-8.	Geologic map of the Morse Creek 7.5-minute quadrangle, Clallam County, Washington, by H. W. Schasse and Michael Polenz. 2 color pl., 30 x 36 in., scale 1:24,000, plus 19 p. text. [http://www.dnr.wa.gov/geology/pubs/pubs_ol.htm]	\$17.50 CD \$1.00	2003-8	Geologic map of the Nine Mile Falls 7.5-minute quadrangle, Spokane and Stevens Counties, Washington, by R. E. Derkey, M. M. Hamilton, and D. F. Stradling. 38 x 36 in. color pl., scale 1:24,000. [http://www.dnr.wa.gov/geology/pubs/pubs_ol.htm]	\$7.50 CD \$1.00
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2003-2	Tsunami inundation map of the Neah Bay, Washington, area, by T. J. Walsh, E. P. Myers III, and A. M. Baptista. 38 x 36 in. color pl., scale 1:24,000. [http://www.dnr.wa.gov/geology/pubs/pubs_ol.htm]	\$7.50 CD \$1.00	2003-10	Geologic map of the Nisqually 7.5-minute quadrangle, Thurston and Pierce Counties, Washington, by T. J. Walsh, R. L. Logan, Michael Polenz, and H. W. Schasse. 42 x 36 in. color pl., scale 1:24,000. [http://www.dnr.wa.gov/geology/pubs/pubs_ol.htm]	\$7.50 CD \$1.00
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■ DIGITAL REPORTS ■

2.	Digital geologic maps of the 1:100,000 quadrangles of Washington, by Washington Division of Geology and Earth Resources staff. 2001 (version 1).	CD \$1.00	3.	Digital inventory of flood-plain mines in Washington State, by L. R. Baker, K. W. Wegmann, D. T. McKay, Jr., D. K. Norman, and C. N. Johnson. Includes ArcView Files plus 4 p. text as a PDF file. [http://www.dnr.wa.gov/geology/pubs/pubs_ol.htm]	CD \$1.00
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Washington Geology

Washington Geology is published electronically about four times a year. Articles cover topics of interest to both geologists and the general public. All new division reports or maps are announced in *Washington Geology*. The current issue and recent back issues are available in PDF format at <http://www.dnr.wa.gov/geology/washgeol.htm>.

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This 8½ x 14 in. map, compiled by J. E. Schuster, includes a brief description of the geologic history of Washington. Scale 1:2,250,000 (or 1 in. = approx. 37 mi). 1992 (text revised 2002). (Also contained in Teacher Packet.) [<http://www.dnr.wa.gov/geology/pagemap.htm>] Free

Bibliography of Washington Geology

The *Digital Bibliography of the Geology and Mineral Resources of Washington State* is available as an online searchable database at <http://www.dnr.wa.gov/geology/washbib.htm>.

Index to Geological and Geophysical Mapping

The revised *Index to Geologic and Geophysical Mapping*, formerly available in print, is now available electronically at <http://www.dnr.wa.gov/geology/mapindex.htm>.

1:100,000 Geologic Maps in Arc/Info

Geologic coverage of the entire state of Washington in ArcInfo format is available on CD-ROM as Digital Report 2. The geology was compiled at 1:100,000 scale and is divided into 30- by 60-minute quadrangles (see back cover for location of quadrangles). Contact our office (see p. 2) for details. This work was supported by the U.S. Geological Survey STATEMAP program. Washington Division of Geology and Earth Resources would appreciate credit as the source of the data. \$1.00.

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Selected information about earth science resources: lists of references on selected topics in geology specific to Washington and on dinosaurs, paper models of fault blocks and a volcano, and a page-size geologic map.

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Information on recreational placer gold mining and mining claims procedures (both state and federal) and the "Gold & Fish" brochure.

Collecting Packet

Information for mineral and fossil collectors on geologic time, rocks, fossils, and minerals in Washington; ghost town references; gem and ornamental stone localities of Washington; Washington fossil locations; fossil bibliography.

Earthquake Packet

Reprints including: Could a great earthquake strike the state of Washington?; Washington earthquakes; Earthquakes aren't just in California; Earthquake tips; and the Earthquake Hazard Reduction Series list from the Federal Emergency Management Agency.

Mount St. Helens Packet

Reprints including: Washington's five volcanoes; Mount St. Helens pre-1980 eruption description; 1980 eruption; and 10-year summary.

Regulatory Information Packets

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